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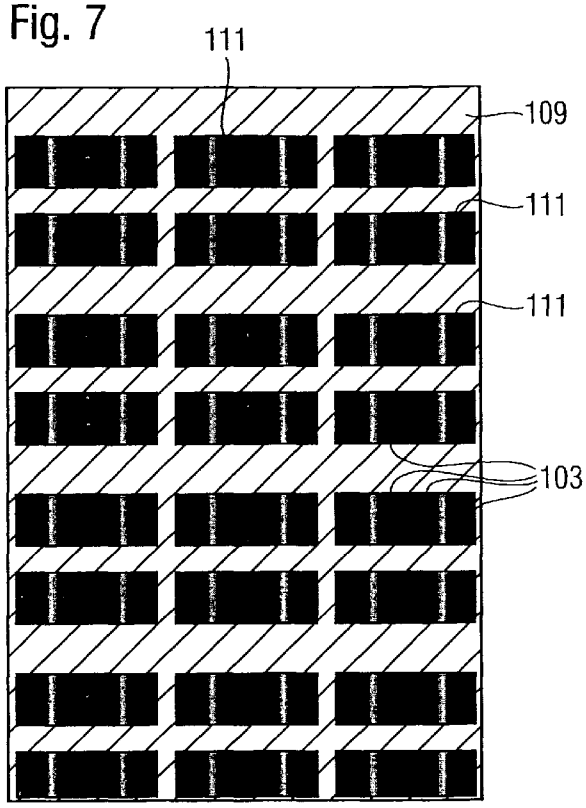
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(54) Title: METHOD OF INSPECTING AND PROCESSING SEMICONDUCTOR WAFERS

Fig. 7



(57) Abstract: A wafer inspection method comprises imaging a full surface of the wafer at an imaging resolution insufficient to resolve individual microstructures which are repetitively arranged on the wafer. In accordance with the invention, the properties of features of microstructures are determined through the calculation of one or more values from a selected group of detection signals even though the microstructures cannot be directly resolved in the imaging. Thus a mask (109) is applied to the recorded image and unmasked portions (111) of the image are further processed by averaging. The unmasked portions (111) are selected such that they include memory portions of the wafer. The feature property can comprise a line width, a side wall angle, a critical dimension (CD), etc. Images taken at different illumination wavelenghts or polarization states can also be combined.

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